

Pentosan Polysulphate (Cartrophen)

Pentosan polysulphate (PP) is a unique and advanced treatment for joint diseases such as arthritis and a wide range of musculoskeletal injuries and conditions.

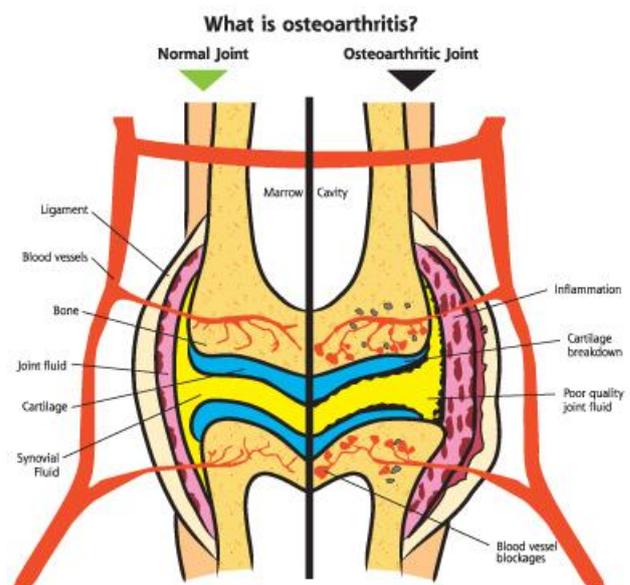
PP is a member of the advanced class of 'regenerative' treatments in that it acts to treat the condition as opposed to simply masking the symptoms. It stimulates the healing of damaged cartilage and soft tissues such as muscles, tendons and ligaments, as well as slowing down the degenerative processes which lead to the development and progression of arthritis.

As well as arthritis, PP is increasingly being used in the treatment of joint injuries and to assist in the recovery of joints following surgery. Joint diseases such as elbow and hip dysplasia will benefit from early treatment with PP and it will often form the basis of a long-term management strategy to minimise the later development of arthritis. PP can also be used for spinal problems associated with disc disease and spondylosis. PP has also shown promise in the treatment of other soft tissue diseases such as cystitis by increasing the thickness of the protective Glycosaminoglycan (GAG) layer of the bladder lining.

PP is very safe with minimal side effects or harmful effects on other organs, unlike conventional anti-inflammatory drugs. This is because it works to support the body's own repair and protective mechanisms and does not have adverse pharmacological effects elsewhere.

How does PP work?

1. Cartilage-producing cells (Chondrocytes) are stimulated to secrete proteoglycan which provides the building blocks for cartilage and other joint structures. This improves the integrity of the cartilage and cushioning of the joint surfaces.
2. Synoviocytes (joint-lining cells) are activated to produce Hyaluronic Acid (HA) which increases the quantity and quality of synovial fluid (joint fluid) thus improving the lubrication of the joint surfaces.
3. The blood supply and nutrition of the joint is improved by stimulating levels of 'tissue plasminogen activator' which accelerates the removal of tiny blood clots in and around the damaged joint.
4. Enzymes associated with accelerating joint damage (such as 'collagenase' which breaks down collagen in soft tissues and cartilage) are inhibited.
5. Damaging free radicals are removed by stimulating scavenging enzymes.
6. Enzymes and growth factors which stimulate cartilage formation (e.g. IGF-1) are actively stimulated.



How is PP given?

PP is given initially as a course of 4 to 6 injections 1 week apart (+/- 2 days). The injections are given under the skin of the neck and are painless. During this time your pet should only receive gentle exercise as vigorous exercise can provoke joint inflammation and limit the effect of the injections. Some animals may be more uncomfortable during the initial course as the stimulation of diseased joint tissues can make them more sensitive. A further injection must then be given after one month and then top-up injections are given every 1-3 months as required.

Though many will be much improved within the first few weeks, it can take up to 3 months before appreciable improvements are seen. If the effectiveness of the injections decreases or top-ups are missed then the initial loading course may need to be repeated – indeed the manufacturers recommend that all animals receiving regular injections have a full 4-week course at least once a year to maintain full benefit. PP may be used on its own or in conjunction with other regenerative treatments such as PRP or MSCs/stem cells. Anti-inflammatories (NSAIDs) can be used with PP but should be avoided 24 hours before or after an injection since they can block some of the beneficial actions of PP listed above. If possible, the use of NSAIDs should be avoided during the initial 4 week course and other painkillers (eg tramadol, gabapentin) used instead if your pet is in discomfort.